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Spaceport News

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http://www-pao.ksc.nasa.gov/kscpao/snews/snewstoc.htm John F. Kennedy Space Center

Safety concerns motivate cable check

SRBs deemed ready for launch

The Space Shuttle Atlantis was rolled back from Launch Pad 39A on Jan. 19 to conduct tests on system tunnel cables on the solid rocket boosters (SRBs).

The tests were successfully completed and all safety concerns addressed. Atlantis was rolled back to the pad on Jan. 26.

A prior extensive evaluation of NASA's SRB cable inventory on the shelf revealed conductor damage in four of about 200 cables.

Shuttle managers decided to prove the integrity of the system tunnel cables on Atlantis before launching the Shuttle on its STS-98 mission, rescheduled for Feb. 7 at 6:11 p.m. EST.

Workers conducted inspections, making continuity checks and conducting X-ray analysis on 36 cables located in the system tunnels. Each tunnel, located on the booster's exterior, is a protective cover that runs the length of

(See CABLES, Page 5)

2001 Space Shuttle launches

- **STS-98**, Feb. 7 at 6:11p.m. EST
- **STS-102**, March 8 at about 7 a.m. EST
- **STS-100**, April 19 at 2:04 p.m. EDT
- **STS-104**, June 8
- **STS-105**, June 21, under review
- **STS-107**, Aug. 2, under review
- **STS-108**, Oct. 4 at 6:27 p.m. EDT
- **STS-109**, November

Inside

More car passes now available

Kennedy Space Center employees will have an easier time obtaining causeway car passes for viewing future mission launches.

So will their friends, relatives and neighbors.

New rocket emission studies have shown the potential for a rocket exhaust hazard on the NASA Causeway has been essentially eliminated.

NASA has determined it's safe for more car passes to be issued.

KSC NASA and contractor employees should obtain car passes from their directors, said Debra L. Frostrom, chief of Guest

(See PASSES, Page 5)

A sample NASA Causeway pass for STS-98. KSC NASA and contractor employees should obtain car passes from their directors.

African-American History Month begins

A number of special events are planned for Kennedy Space Center this month during the annual observance of African-American History.

The 2001 National Theme is "Creating and Defining the African-American Community: Family, Church, Politics and Culture."

The Black Employee Strategy Team (BEST) is hosting this year's celebrations and believes other Kennedy Space Center team members will be excited about the month's events.

The highlight of the month will be the 2001 African-American History Month Luncheon in the Kurt Debus Conference Facility at the KSC Visitor Center on Feb. 7.

The luncheon will be a power-packed event, recognizing local achievers, paying tribute to African-American culture through prose and song and honoring KSC's outstanding "BEST," both past and present.

The keynote speaker for this event will be Ray Johnson, educator, lecturer and scholar.

As founder and principal of the highly regarded Paul Robeson Academy in Detroit, Johnson has been a pioneer in the realm of character education, accelerated learning, multi-cultural and African-Centered curriculum through his groundbreaking site-based management.

He has elevated parental and community involvement to new levels of excellence.

Because of his unique ability to engage the reluctant learner and raise student achievement, he has earned the distinction as one of the Country's top educational consultants.

Armed with the mission of providing a world-class education for all children, he has worked with countless school districts, universities and government agencies, reaching out to develop and empower thousands through his many seminars in curriculum development, organizational psychology and student motivation.

Educator Ray C. Johnson will be the keynote speaker for the African-American History Month Luncheon on Feb. 7.

In an effort to bolster self-esteem and foster positive values, Johnson has created Man-to-Man and S.E.L.F. (Sisters Empowered Through Love and Friendship) – mentoring programs for boys and girls ages 4 through 21.

Named by *The Detroit News* as one of Detroit's "Heroes," he has been presented with countless awards, including Eastern Michigan's Meritorious Civil Rights Award, Mason's International "Man of the Year" award, Detroit Institute of Commerce's Excellence in Community Service Award, National Head Start's Outstanding Contributor's to Education Award, the Ameritech Outstanding Educator's Award and The Detroit City Council's spirit of Detroit Award.

WXYZ TV Channel 7 cited Johnson for "Top of The Class" recognition. He was profiled by CNN and NBC. Last year he was invited to appear on CBS's 60 Minutes show.

He has appeared on the covers of *The Village Voice Newspaper, Black Issues In Higher Education Magazine, The Boston Globe, The Detroit News,* the *Detroit Free Press, The Chicago Sun Times* and *Fortune Magazine*.

Most recently he has traveled to Europe and Africa to provide training and to apply his unique vision to the development of new schools.

When it comes to embracing the philosophy embodied by the African proverb, "It Takes An Entire Village To Raise And Educate A Child," Ray Johnson's singular approach to education does so wholeheartedly. His dynamism, dedication and humanitarianism are fueling a groundswell of change in schools nationwide.

As the Robeson Academy flourishes and its African-Centered approach is poised to extend districtwide, the influence and import of this visionary educator expands and multiplies.

In addition to the special luncheon event featuring Johnson, every Friday throughout the month of February Lackmann Culinary Services will serve traditional African-American foods in all KSC cafeterias.

Employees who placed their BEST T-shirt orders prior to Jan. 31 will celebrate AAHM by wearing those shirts on Fridays.

To culminate African-American History Month at KSC, employees are welcome to fellowship together at the Antioch Missionary Baptist Church in Oviedo.

BEST is proud to announce its new Web site where all of the information on African-American History Month and more can be found. See **http://www-best.ksc.nasa.gov/BEST/index.html**

This year is the 75th anniversary of the establishment of "Negro History Week" by Dr. Carter G. Woodson and the 25th anniversary of Black History Month established by President Gerald Ford. KSC team members are invited to be a part of the celebration.

Federally Employed Women host seminar

The Space Coast Chapter of Federally Employed Women Inc. (FEW) will present their 22nd annual one-day training seminar on Wednesday, March 7, and repeated on Thursday, March 8, at the Holiday Inn in Cocoa Beach.

The seminar is titled "Partnering for a New Future."

FEW is teaming up with the Federal Women's Program Working Group from Kennedy Space Center to present a special program for Women's History Month, which is celebrated each year in March.

Registration and a continental breakfast begin at 8 a.m., with the keynote address beginning at 9 a.m. Carol Clendinen, keynote speaker, will provide a road map toward developing the peace of mind we all seek.

Workshops begin at 10:15 a.m. and are repeated in the afternoon so that participants may select two workshops to attend.

Sessions consist of four workshops:

- (A) "Reorganizing From The Inside Out," focusing on turning outer chaos into workable order, will be presented by Kim Wolinski, founder of ReDecisions Institute in Denver;
- (B) "Mars and Venus in The Workplace," offering gender communications skills for the 21st Century, by Melodie D. Tucker, a Mars-Venus facilitator based on Merritt Island;
- (C) "Your Call to Leadership: Challenges and Opportunities," developing effective leadership qualities, by Queen Bowman, a freelance professional motivational speaker of Saint George, S.C.; and
- (D) "Workplace Violence," understanding trends and cultural aspects relating to workplace violence, by Jeff Landreth, vice president, Corporate Security of GlaxoWellcome Inc., Research Triangle Park, N.C.

FEW has been providing quality training programs here on the Space Coast since 1979 and welcomes the general public to FEW's programs.

Continental breakfast and lunch are included in the cost of the seminar, which is $70. For registration information, contact Christy Vanasse at (321) 867-3749 or Christy.Vanasse-1@ksc.nasa.gov.

Inside the Co

Dynacs technician Paul Yocom measures the corrosion potential of steel in concrete.

Above, Dynacs electronics technician Wayne “W.A.” Crawford, left, and Dynacs engineer Jeff Crisafulli check remote data acquisition instrumentation on liquid applied coating test samples at the Corrosion Technology Beach Test Site. The instrumentation allows researchers to access test data real time via the Internet.

rrosion Technology Testbed

Team takes on new challenges

Above, NASA Testbeds Manager Louis MacDowell, at right, and NASA's Corrosion Technology Testbed Lead Scientist Luz Marina Calle, at left, view corrosion measurement data via the Internet with Dynacs corrosion engineer Joe Curran. At left, Dynacs corrosion engineer Rubiela Vinje and Dynacs technician Ray Springer carry out an inspection at the Corrosion Technology Beach Test Site on panels being used to test corrosion retardant additives for the Army. Insets above left, MacDowell inspects severe corrosion damage to aluminum test panels and a test panel showing the effects of KSC's highly corrosive environment on carbon steel. At lower left, Calle uses electrochemical techniques to investigate the corrosion-preventative properties of environmentally friendly coatings being developed to protect aerospace vehicles and launch equipment.

An expanding research and spaceport technology development area at Kennedy Space Center is the Corrosion Technology Testbed in the Spaceport Engineering and Technology Directorate.

Dynacs, KSC's engineering development contractor, provides support for the testbed, which includes laboratories in the Operations and Checkout Building and a Beach Corrosion Facility near the Space Shuttle launch pads.

The corrosion science and engineering group tests and conducts research on coatings, alloys and other materials to determine how well they will resist deterioration when exposed to the elements. The team also seeks to develop new environmentally friendly materials that better resist corrosion than those currently being used.

"With the salt, the sun and the humidity here, we have one of the most aggressively corrosive environments in the world, definitely the most corrosive in North America," said NASA Testbeds Manager Louis MacDowell. "We've been researching corrosion for more than 30 years, so we have a large data base to pull from."

The highly corrosive environment of the beach site allows researchers to quickly accumulate data. The testbed laboratories provide for additional electrochemical testing, research and physical characterization of materials.

The testbed's well-established reputation in corrosion research continues to grow and has generated a number of new government and commercial partnerships and funding sources.

The U.S. Army, U.S. Navy, Lockheed Martin Space and Missiles, Bethlehem Steel and the Civil Engineering Research Foundation are among the testbed's customers. The testbed is also working on establishing a partnership with the Jet Propulsion Laboratory to study the conductivity of Martian soil.

Such partnerships have allowed the testbed to increase its core group in recent years to include Dr. Luz Marina Calle, NASA Corrosion Technology Testbed lead scientist, and Joe Curran, Dynacs corrosion engineer.

"We've acquired some important outside projects in recent years and they're helping build our expertise and resources," Curran said. "The more we learn about corrosion, the better we are able to combat it at KSC and beyond."

Another recent enhancement to the testbed is a new data collection resource developed by a Dynacs data acquisition system team.

Electronic data is gathered constantly through the use of sensors embedded in the samples and desktop computers in the laboratory at the site. Researchers are able to access test data real time via the Internet. Web camera monitoring at the site is also being implemented.

The Beach Corrosion Site was originally established at KSC in the 1960s to evaluate coatings used to protect steel used in the early space program's structures. Some of the earliest corrosion test samples continue to be monitored at the site.

In 1985, NASA officially established a corrosion laboratory at KSC in 1985 and brought MacDowell on board as a corrosion engineer. The laboratory's research on coatings for the pad towers led in 1987 to certified coating inspections throughout the agency. The inspections, which are still held, ensure protective coatings are applied properly.

Corrosion test results continue to help Center managers choose and maintain corrosion-resistant materials at KSC – including those for roadway supports, pad elements and flight hardware. Materials are tested for reliability, cost vs. benefit, and environmental safety.

"What we're most interested in is reliability," MacDowell said. "Product sales people make a lot of claims, but we have to have proof for how well a material will hold up here. Not only is the natural environment highly corrosive, but the Solid Rocket Boosters dump tons of hydrochloric acid at the pad during launch."

A promising new coating – used for steel in concrete – has been developed by the group. It is expected not only to retard corrosion in steel-reinforced concrete structures at KSC, but also to help protect structures in coastal areas and cold climate areas where salt is used to melt ice and snow.

The coating is expected to prove especially helpful in keeping steel used in condominium balconies from deteriorating. Final testing of the new coating should be completed within the next two years.

The coating transfers the corrosion process from the interior steel to the exterior coating. Corrosion factors such as salt tend to speed electron loss in iron and result in corrosion of the rebar and deterioration of the concrete structure. What makes the new coating special is that it provides the iron atoms with new electrons as the iron loses electrons.

"We think there is a huge licensing potential for this new technology and that it will help boost the technology development profile of Kennedy Space Center," MacDowell said.

For more information on the Corrosion Technology Testbed, see the Web site **http://corrosion.ksc.nasa.gov/**.

CABLES ...

(Continued from Page 1)

each booster from the aft skirt to the forward skirt.

Eighteen cables were evaluated on each SRB. The cables carry critical commands and data to support successful SRB operation not limited to booster separation.

New launch dates and times also have been scheduled for other Space Shuttle missions during 2001. See page 1 for the updated schedule.

A close-up view of Atlantis from the 235-foot level of the Fixed Service Structure on Launch Pad 39A before the Shuttle was rolled back for solid rocket booster cable tests. The cables are located inside each SRB's tunnel system, seen at left on the outside of one of the SRBs.

Space Shuttle Atlantis is viewed as it approaches the Vehicle Assembly Building on its way back from Launch Pad 39A. Atlantis was rolled back to the VAB so that workers could conduct inspections, make continuity checks and conduct X-ray analysis on the 36 solid rocket booster cables.

All American Picnic set for March 17

All Kennedy Space Center employees and their families are invited to the All American picnic on March 17.

The picnic will feature kid stuff, family sports and activities, dunking booth, fishing tournament, chili cook-off, wildlife encounter and food. Committees are currently forming and volunteers are needed to assist with children games, parking, food, entertainment and other helpful tasks.

Interested volunteers should e-mail either Sam Gutierrez at Samuel.O.Gutierrez@jbosc.ksc.nasa.gov or Arden Belt at Arden.Belt-1@ksc.nasa.gov.

Additional information will be provided as the date nears, but volunteers are needed now.

PASSES ...

(Continued from Page 1)

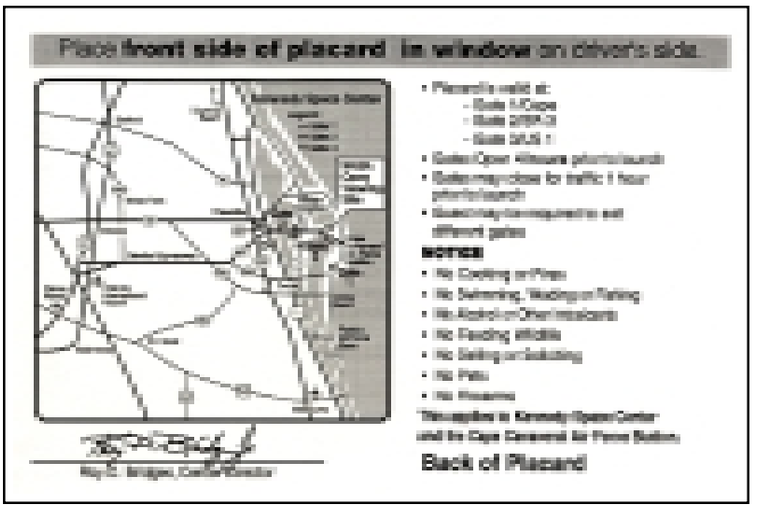
Services & Special Events Division.

"We are so pleased that we are going to be able to increase the allotment of car passes for KSC employees and the general public," Frostrom said. "There's such a high demand for these passes, and now even more people can bring their family and friends out to experience the beauty and drama of our Space Shuttle launches first hand."

Members of the general public should make written requests for their causeway car passes.

Because the number of vehicle passes is limited, requests will be accepted on a first come first served basis and only for launches this calendar year.

Specific Space Shuttle mission launch assessment dates can be found on the World Wide Web at **http://www-pao.ksc.nasa.gov/kscpao/schedule/schedule.htm**.



All requests from the public, not from KSC employees, should be submitted in writing to Car Pass Request, PA-PASS, Kennedy Space Center, FL 32899.

For more information, visit the Web site **http://www-pao.ksc.nasa.gov/kscpao/carpass/carpass.htm**.

Another alternative for viewing launches from the NASA Causeway is to purchase a Launch Transportation Ticket from the KSC Visitor Complex. For more information, call 449-4444 or visit the Web site **http://www.kennedyspacecenter.com/html/see_launch.html**.

Processing Mars Odyssey

At left, workers in the Spacecraft Assembly and Encapsulation Facility – 2 attach an overhead crane to the solar array on the 2001 Mars Odyssey Orbiter to move the component to a workstand. Below, workers help guide the solar array onto the workstand. The move gives workers access to other components of the spacecraft and allows inspection of the array.

The Mars Odyssey carries three science instruments: the Thermal Emission Imaging System (THEMIS), the Gamma Ray Spectrometer (GRS) and the Mars Radiation Environment Experiment (MARIE).

THEMIS will map the mineralogy and morphology of the Martian surface using a high-resolution camera and a thermal infrared imaging spectrometer.

The GRS will achieve global mapping of the elemental composition of the surface and determine the abundance of hydrogen in the shallow subsurface. The GRS is a rebuild of the instrument lost with the Mars Observer mission.

The MARIE will characterize aspects of the near-space radiation environment as related to the radiation-related risk to human explorers. The Mars Odyssey Orbiter is scheduled for launch on April 7 aboard a Delta 7925 rocket from Launch Pad 17-A at Cape Canaveral Air Force Station.

Calling for FIRST volunteers

NASA and the Kennedy Space Center will be hosting our third annual Regional FIRST Robotics competition March 1-3 at the KSC Visitor Complex.

The competition follows a format devised by For Inspiration and Recognition of Technology (FIRST), a non-profit organization based in New Hampshire.

High school students, working with volunteer technical mentors, begin with identical crates of mechanical components supplied by FIRST and then spend six weeks constructing robots.

Last year, KSC was a co-sponsor for 21 of the 29 teams, 16 of which were from Florida. Eighteen KSC employees served as mentors to local teams, guiding the designs of the robots.

Employee support for mentoring and other aspects of the contest has been outstanding in past years. Volunteers with technical or non-technical backgrounds are needed again this year.

Those interested in volunteering again or for the first time, please call Pat Christian at 867-2144 or e-mail her at patricia.christian-1.

John F. Kennedy Space Center

Spaceport News

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Contributions are welcome and should be submitted two weeks before publication to the Media Services Branch, XAE-1. E-mail submissions can be sent to Katharine.Hagood-1@ksc.nasa.gov

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